L 10778-66

ACC NR: AP5028925

for his interest and discussion of this work, and to S. A. Nazarov for making measurements. Orig. art. has: 3 figures and 1 table.

SUB CODE: 11, 20 / SUBM DATE: 28Jun65 / ORIG REF: 003/ OTH REF: 002

Card 2/2

L 20396-66 ETC(f)/EPF(n)-2/EWG(m)/T/EWP(t) IJP(c) RDW/JD/WW
ACC NR: AP5022470 SOURCE CODE: GE/0030/65/011/001/0429/0441

78
75
B

AUTHOR: Lashkarev, V. Ye.; Sheynkman, M. K.

ORG: Institute of Semiconductors, Academy of Sciences of the Ukrainian SSR, Kiev

TITLE: Determination of the parameters of sensitizing recombination centers in CdS and CdSe single crystals by temperature and optical quenching of photocurrents

SOURCE: Physica status solidi, v. 11, no. 1, 1965, 429-441

TOPIC TAGS: photoconductor, single crystal, parameter, electron capture, electron hole

ABSTRACT: New stationary and kinetic methods are proposed for determining the parameters of sensitizing recombination r-centers in high resistivity monopolar photoconductors. These methods are based on thermal and optical quenching of the photocurrent. They enable all the parameters of r-centers in CdS, CdSe, and partially

Card 1/2

L 20396-66

ACC NR: AP5022470

3

Cd(S, Se) to be determined. These parameters include the concentration and energy centers, and their cross sections for electron and hole capture. The method also gives the cross sections for absorption and photons with energies of 0.9 and 1.4 eV, these photons transferring a hole from an r-center to an excited level, and to the valence band, respectively. The occupation of r-centers by holes under weak illumination and the probabilities of hole capture by r- and s-centers can be obtained. The experiments for determining the parameters of r-centers were carried out and discussed by the authors together with their collaborators Lubtchenko, A. V. (CdS) and Gorodetsky, I. Ya. and Yermolovich, I. B. (CdSe). The authors wish to thank them greatly. Orig. art. has: 5 figures, 19 formulas and 1 table. [Based on author's abstract]

SUB CODE: 20/ SUBM DATE: 05Jul65/ SOV REF: 006/
OTH REF: 013/

Card 2/2 BK

L 18764-66 EWT(m)/T/EWP(t) IJP(c) JD

ACC NR: AP6003775 SOURCE CODE: UR/0181/66/008/001/0134/0141

AUTHORS: Luk'yanchikova, N. B.; Sheynkman, M. K. 53 52 B

ORG: Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR)

TITLE: Low frequency noise of the photocurrent in single crystal cadmium sulfide

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 134-141

TOPIC TAGS: photocurrent, cadmium sulfide, single crystal, photoresistor, signal to noise ratio

ABSTRACT: This is a continuation of earlier work by the authors on the low frequency photocurrent noise of CdS, (FTT v. 4, 1213, 1962), where it was shown that the resistance fluctuations of this material have a high spectral density $(\Delta N^2)/N$ at sufficiently low temperatures, reaching values of 10^4 and more. Since the earlier investigations were confined to homogeneous semiconductors, the authors investigate

Card 1/2

L 18764-66

ACC NR: AP6003775

the magnitude and spectrum of the noise and the photoresponse spectra in single-crystal CdS containing inhomogeneities at frequencies 1 -- 4000 cps. A simultaneous study was made of the distribution of the optical resistance and the relaxation times of the photocurrent along the samples. In some samples the inhomogeneities of resistance were introduced artificially. The photosensitive CdS single crystals were produced by several methods, and were illuminated weakly with light of wavelength ~520 or ~630 nm from which the infrared component was cut out. Most measurements were made at room temperature and in air, although some were made in vacuum and at other temperatures. The spectral-measurement apparatus was described elsewhere (UFZh v. 10, 27, 1965). The results show that the resistance and relaxation-time inhomogeneities of the photocurrent greatly influence the form of the spectrum and the spectral distribution. The noise spectrum exhibits characteristic peaks which are due to the presence of a narrow high-resistance region near one of the electrodes, and such an inhomogeneity leads to high values of $(\Delta N^2)/N \gg 1$. There is no clear-cut explanation of these peaks as yet. The authors thank V. Ye. Lashkarev for interest in the work and a discussion. Orig. art. has: 5 figures, 4 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 05Jul65/ ORIG REF: 015/ OTH REF: 020

Card 2/2 5m

L 22200-66 EWT(m)/EPF(n)-2/EWT(t) IJP(c) JD/GS

ACC NR: AP6012459 SOURCE CODE: UR/0181/66/008/004/1040/1048

AUTHOR: Galushka, A. P.; Yermolovich, I. B.; Korsunskaya, N. Ye.; Konozenko, I. D.; Sheynkman, M. K.

ORG: Institute of Physics, AN UkrSSR (Institut fiziki AN UkrSSR); Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR)

TITLE: Effect of gamma-ray and fast-neutron irradiation on electrophysical properties of CdS single crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1040-1048

TOPIC TAGS: irradiation, gamma irradiation, neutron irradiation, irradiation effect, irradiation damage

ABSTRACT: An investigation was made of the effect of nuclear radiation on some properties of CdS single crystals grown by the zone sublimation method and not subjected to alloying. To measure Hall effect, specimens shaped as a parallelepiped (15 x 4 x 1 mm) were used; for other investigations, specimens 4 x 3 x 1 mm were used. The neutron irradiation was carried out in a VVR-M-type reactor at a temperature below 70C. The gamma-ray irradiation was carried out in a cobalt installation at a temperature below 20C. To determine the character of the

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ACC NR: AP6012459

defects appearing in CdS single crystals due to neutron and gamma-ray irradiation, the following crystal characteristics were investigated before and after irradiation: dark resistance, photosensitivity to white light, spectral distribution of photoconductivity, spectra of infrared quenching, Hall mobility of majority current carriers and its dependence on temperature, concentration and depth of occurrence of capture levels, characteristics of recombination centers, and luminescence spectra at 300 and 77K. Mobility and spectral distribution of photoconductivity were measured in a cryostat at a vacuum of the order of 10^{-4} mm Hg. All other characteristics were measured in the air. It was found that gamma-irradiation primarily creates acceptor-type defects. In CdS, the simplest acceptors can be Cd vacancies or S atoms in interstices. Neutron irradiation creates donor-type defects. The simplest donors can be either Cd atoms in interstices or S vacancies. In addition, the products of nuclear transformations can also be donors. Orig. art. has: 6 figures and 2 tables. [JA]

SUB CODE: 20/ SUBM DATE: 09Aug65/ ORIG REF: 008/ OTH REF: 019
ATD PRESS: 4236

Card 2/2 ULR

L 18883-66 EWT(1)/EWT(m)/ETC(f)/EWG(m)/T/EWP(t) IJP(c) RDW/GG/JD

ACC NR: AP6007803 SOURCE CODE: UR/0185/66/011/002/0221/0224

AUTHOR: Lashkar'ov, V. Ye.; Sheynkman, M. K.; Lyubchenko, O. V.; Gorodets'kyy, I. Ya.; Yermolovych, I. B.

ORG: Institute of Semiconductors AN UkrSSR, Kiev (Instytut napivprovidnykiv AN URSR)

TITLE: Determination of the parameters of "sensitizing" recombination centers in CdS and CdSe single crystals

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 11, no. 2, 1966, 221-224

TOPIC TAGS: color center, cadmium sulfide, cadmium selenide, single crystal, electron recombination, capture cross section, valence band, ir light

ABSTRACT: Continuing earlier investigations of the kinetics of relaxation of photocurrent in CdS and CdSe single crystals (FTT v. 7, 1717, 1965 and earlier papers), the authors consider in this paper new stationary and kinetic methods of determining hitherto undetermined parameters (the capture coefficient (C_r) of holes by type II centers, and their energy levels (E_{VT}) reckoned from the top of the valence band), as well as new methods of determining the cross section for the capture of a quenching infrared photon. The new methods are based on the use of stationary

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L 18883-66
ACC NR: AP6007803 O

exciting illumination in conjunction with pulses of exciting or quenching ir light. The theory underlying the methods is briefly described. The methods were tested on selected high-resistance undoped CdS and CdSe single crystals. The tests showed the presence in CdS of two types of recombination centers, with $C_r \approx (3\text{--}5) \times 10^{-13}$ cm^3/sec and $E_{VT} = 1.0$ ev for the first, and $C_r \approx (2\text{--}3) \times 10^{-12}$ cm^3/sec and $E_{VT} = 1.18$ ev for the second. Tests made by three different methods gave nearly identical results. Orig. art. has: 2 figures, 3 formulas, and 1 table. [02]

SUB CODE: 20/ SUBM DATE: 01Oct65/ ORIG REF: 005/ OTH REF: 002
ATD PRESS: 4217

Card 2/2

L 26588-66 EWT(1)/T/EWA(h) IJP(c) AT

ACC NR: AP6011430 SOURCE CODE: UR/0020/66/167/004/0795/0798

AUTHORS: Sheynkman, M. K.; Lyubchenko, A. V.

ORG: Institute of Semiconductors, Academy of Sciences, UkrSSR (Institut poluprovodnikov Akademii nauk UkrSSR)

TITLE: Two parallel mechanisms for the capture of carriers by one recombination center

SOURCE: AN SSSR. Doklady, v. 167, no. 4, 1966, 795-798

TOPIC TAGS: semiconductor capture, ir phenomenon, capture cross section, color center, recombination luminescence, transition probability

ABSTRACT: The authors report that they have observed in CdS, for the first time, recombination which proceeds via several channels through one type of center, and specifically that hole capture by the r-center can occur in parallel by two channels -- via a definite excited state and by bypassing this state. This was observed by investigating the kinetics of infrared quenching by a procedure described earlier (FTT

Card 1/2 UDC: 537.312.51 + 537.312.52 + 537.312.6

L 26588-66

ACC NR: AP6011430

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v. 7, 1717, 1965; DAN v. 161, 1310, 1965), illuminating the CdS crystals with weak absorbed light on which short infrared pulses at both extinction maxima (1.4 and 0.9 ev) were superimposed. By measuring the frequencies corresponding to the two transitions and by measuring directly the fraction of the released holes as a function of the temperature, it becomes possible to determine the ratio of the probabilities of the two processes and the excitation energy of the excitation level. The results can be reconciled with theoretical calculations only by assuming the presence of the two simultaneous capture mechanisms. It is pointed out that this demonstrated possibility of simultaneously realizing two different carrier capture mechanisms by the center should be taken into account both during the interpretation of the recombination and luminescence processes on impurity centers in semiconductors, as well as in the study of the properties of different F and V centers in alkali halide crystals.

The authors thank Academician of AN UkrSSR V. Ye. Lashkarev and Doctor of Physical Mathematical Sciences E. I. Rashba for interest in the work and discussion. This report was presented by Academician A. V. Shubnikov on 21 July 1965. Orig. art. has: 2 figures and 7 formulas.

SUB CODE: 20/ SUBM DATE: 19Jul65/ ORIG REF: 004/ OTH REF: 006

Card 2/2 BLG

ACC NR: AP6036785 (A) SOURCE CODE: UR/0363/66/002/011/1948/1952

AUTHOR: Korsunskaya, N. Ye.; Lebedeva, N. N.; Mirzoyev, B. R.; Sheynkman, M. K.

ORG: Institute for Semiconductors AN SSSR (Institut poluprovodnikov AN SSSR); Azerbaidzhan State University im. S. M. Kirov (Azerbaydzhanskiy gosudarstvennyy universitet)

TITLE: Production and semiconducting properties of single crystal of In_4S_5

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 11, 1966, 1948-1952

TOPIC TAGS: semiconductor single crystal, indium compound, sulfide

ABSTRACT: The In_4S_5 used in the experiments was synthesized in a quartz ampoule evacuated to 0.133 newtons/m^2, in a horizontal tubular furnace whose temperature was automatically regulated with a EPP-09 instrument. Visual observations and thermographic recordings show that at a temperature of 600° there is a rapid exothermic reaction between indium and sulfur with the formation of a solid reaction product. The temperature is then raised to 1000°C, at which temperature there already exists an alloy of the composition In_4S_5, and then reduced at a rate of 70-80°/hour to a temperature of 770°C, at which temperature the reaction takes place. At this temperature, the reaction lasts for 5-6 hours. The temperature is then reduced from

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UDC: 546.682'221:537.311.33

ACC NR: AP6036785

770° to 700°C at a rate of 10°/hour. The product is a porous ingot of a dark gray color. Single crystals of In_4S_5 were grown from the ingot by the method of zone melting. The product single crystals were found to have a monoclinic crystal system, and lattice constants agreeing with previous data. The final experimental samples had dimensions of 4 x 2 x 0.3 mm^3. Detailed studies were made of the electric and photoelectric properties of these monocrystalline plates. Determinations were made of the width of the forbidden band, and of the energy of the acceptor levels. The mobility of the basic carriers was determined. It was concluded from the data that crystals of In_4S_5 have considerable photosensitivity over a wide spectral range at reduced temperatures. Orig. art. has: 6 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 03Feb66/ ORIG REF: 005/ OTH REF: 010

Card 2/2

ACC NR: AP6033562 SOURCE CODE: UR/0181/66/008/010/3004/3009

AUTHOR: Luk'yanchikova, N. B.; Sheynkman, M. K.

ORG: Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR)

TITLE: Photocurrent noise and superlinearity of lux-ampere characteristics in CdS and CdSe single crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 3004-3009

TOPIC TAGS: correlated noise, photoconductivity, optic property, internal photoeffect, optic center, cadmium sulfide, cadmium selenide

ABSTRACT: This is a continuation of earlier work (FTT v. 4, 1213, 1962) where it was shown theoretically that the photocurrent noise can reach a large level in photoconductors with non-constant quantum yield of the internal photoeffects, which depends on the filling of the adhesion levels. The present paper is devoted to a theoretical and experimental investigation of the connection between this noise, as represented by the quantity $\Delta n^2/n$ (n - photocarrier density, Δn^2 - its dispersion) and the superlinearity of the lux-ampere characteristics of the current, as represented by a parameter α, in single crystals of CdS and CdSe. The single crystals used in the investigation were described in an earlier paper (UFZh v. 10, 27, 1965). The measurements were made at 300K in air (CdS) and at 120 and 300K in vacuum (CdSe). The theory is applied to the usual photoconductor scheme, which calls for the presence of two types of recombination centers and adhesion centers, and described in detail by the authors.

ACC NR: AP6033562

elsewhere (FTT v. 7, 1717, 1965 and elsewhere). In addition, α and $\Delta n^2/n$ were measured in the same samples for identical values of n; α was varied with the aid of additional infrared quenching illumination or by temperature quenching of the photocurrent. The results have established that when $\alpha > 1$ and $\Delta n^2/n > 1$, $\Delta n^2/n$ first increases in proportion to α, but eventually this dependence can become nonmonotonic. The experimental results were in qualitative agreement with the theory. The authors thank V. Ye. Lashkarev for discussion of the work. Orig. art. has: 6 figures and 5 formulas.

SUB CODE: 20/ SUBM DATE: 01Apr66/ ORIG REF: 006/ OTH REF: 012

Card 2/2

ACC NR: AP6036956 (A, N) SOURCE CODE: UR/0181/66/008/011/3196/3200

AUTHOR: Korsunskaya, N. Ye.; Lebedeva, N. N.; Sheynkman, M. K.

ORG: Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR)

TITLE: Low-temperature photochemical reactions in In_4S_5 single crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3196-3200

TOPIC TAGS: indium compound, sulfide, photochemistry, photoelectric property

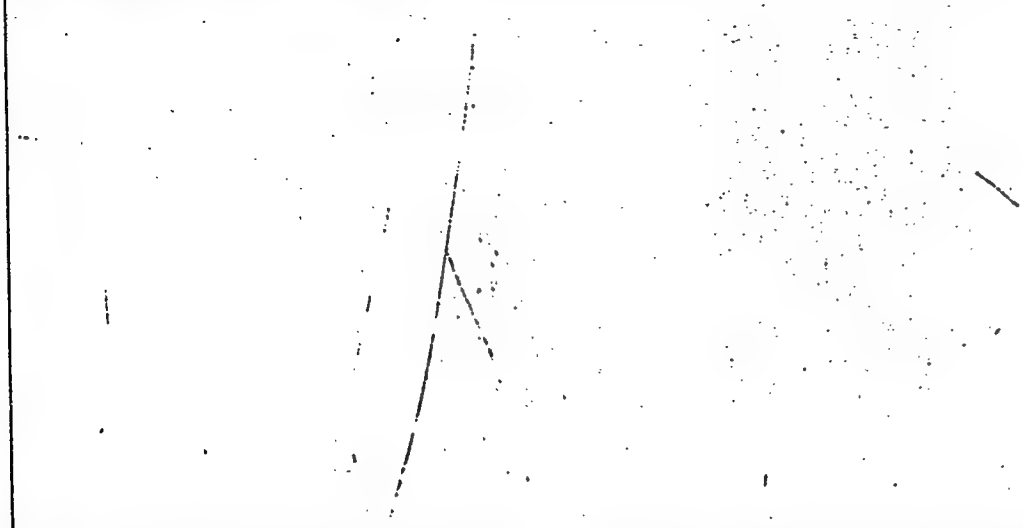
ABSTRACT: The electric and photoelectric properties of In_4S_5 single crystals were investigated. At low temperatures, a strong dependence of the photoelectric properties on the conditions of cooling and illumination of the samples was observed. This is shown to be due to the photochemical formation of new types of trapping centers (t-centers) and sensitizing recombination centers (r-centers), as in the case of CdS, which was studied earlier. The main parameters of these centers were determined. The forbidden gap width, hole mobility, spectral and temperature characteristics of the photocurrent, temperature dependences of the dark current, etc. were measured. It is concluded that the formation of new types of r-centers in CdS and In_4S_5 provides information of the nature of "ordinary" r-centers, since their properties - small cross section of capture of majority carriers and large ratio of capture cross sections of carriers of both signs - are similar. Authors thank V. Ye. Lashkarev for a

Card 1/2

ACC NR: AP6036956

useful discussion. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 25Feb66/ ORIG REF: 006/ OTH REF: 011



Card 2/2

ACC NR: AP6033585 SOURCE CODE: UR/0181/66/008/010/3133/3135

AUTHOR: Malyuk, N. F.; Fedorus, G. A.; Fursenko, V. D.; Shakh-Melikova, I. A.; Sheynkman, M.K.

ORG: Institute of Semiconductors AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR)

TITLE: Determination of the energy required to separate an electron-hole pair in CdS single crystals irradiated with electrons of energy 5 - 50 kev

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 3133-3135

TOPIC TAGS: electron hole, electron energy, stimulated emission, electron bombardment, photoconductivity, electric conductivity, forbidden band

ABSTRACT: In view of the fact that earlier investigations have neglected the question of the energies required to produce or separate electron-holes, and knowledge of these energies is important in connection with the use of electron beams to produce stimulated emission in semiconductors, the authors have determined the electron-hole separation energy ε in single-crystal CdS bombarded with electrons of 5 - 50 keV energy. They were able to measure ε with sufficient accuracy only by using single crystals with a specific nonselective spectral photoconductivity characteristic obtained through special heat treatment. The method of determining ε is based on comparison of the stationary values of the photo- and electron-conductivity in the same crystal. The

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ACC NR: AP6033585

measurements were made in vacuum of 10^{-5} mm Hg at room temperature. The value of $3E_g$ ($E_g = 7.5 \pm 0.8$ ev is obtained in this manner for ε, which is found to be equal also to forbidden band width). The same ratio of ε to E_g was obtained by others for a number of semiconductors and agrees with the approximate theoretical model proposed by W. Shockley. Orig. art. has: 1 figure and 1 formula.

SUB CODE: 20/ SUBM DATE: 19May66/ ORIG REF: 005/ OTH REF: 008

Card 2/2

SHILOVTSEV, S.P., prof.; SHEYNKMAN, M.V., doktor

Some supplementary clinical and laboratory data on cancer diagnosis. Trudy Kuib. med. inst. 24:32-38 '63
(MIRA 17:4)

1. Iz kafedry obshchey khirurgii (zav. - zasluzhennyy deyatel' nauki prof. S.P. Shilovtsev) Kuybyshevskogo medtitsinskogo instituta.

BORODULIN, M.I.; SHEYNKMAN, S.L.

Method of studying the elastic properties of rocks. Razved. i prom. geofiz. no.38:103-106 '60. (MIRA 14:3)
(Rocks—Testing) (Elastic waves)

L 22546-65 EWT(l)/EWG(k)/EWT(m)/EEC(t)/T/EWP(t)/EWP(b) IJP(c) AT/JD

ACCESSION NR: AP4043100 S/0185/64/009/007/0807/0810

AUTHORS: Korsuns'ka, N.Ye. (Korsunskaya, N.Ye.); Sal'kov, Ye.A.; Chernovolenko, A.A.; Sheynkman, M.K.

TITLE: Determining the quantum yield of the intrinsic photoeffect in CdS-monocrystals using short impulse light

SOURCE: Ukrayins'ky*y fizy*chny*y zhurnal, v. 9, no. 7, 1964, 807-810

TOPIC TAGS: CdS monocrystal, photocurrent quantum yield, photosensitivity, fast recombination channel, recombination channel operating time, cadmium sulfide

ABSTRACT: The phenomenological quantum yield of the photocurrent in CdS monocrystals illuminated by light impulses of 2×10^{-7} sec. duration and constant intensity was measured at 300K. Wave length was varied from 480-520 μm. The yield was determined as the ratio of the total of the photoelectrons available in the sample at the end of the light impulse action to the total number of quanta absorbed in the crystal; the latter was determined with the help of photoamplifier FEY-18A calibrated against an absolutely black background. The value of the measured yield was near unity in different photo-

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L 22546-65

ACCESSION NR: AP4043100

sensitive crystals (0.6-1) and did not depend on λ. At the same time the yield, measured upon illumination of these same crystals with light impulses at $t = 10^{-4}$ sec. was several times smaller. Thus the obtained data confirmed that the operating time of the fast recombination channel τ_s was within the limits 10^{-5} sec $> \tau_s > 2 \times 10^{-7}$ sec. "The authors sincerely thank V.E. Lashkar'ov, member of the AN URSR, for attention to and discussion of the work." Orig. art. has: 3 equations and 3 tables.

ASSOCIATION: Instytut napivprovidnykiv AN URSR, Kiev (Institute of Semiconductors, AN URSR)

SUBMITTED: 20Mar64 ENCL: 00

SUB CODE: SS, OP NR REF SOV: 007 OTHER: 000

Card 2/2

L 24156-65 EWA(h)/EWG(k)/EWT(1)/EWT(m)/EWP(b)/T/EWP(t) Peb IJP(c) AT/JD
ACCESSION NR: AP4048873 S/0185/64/009/010/1153/1157

AUTHOR: Yermolovy*ch, I. B. (Yermolovich, I. B.); Sheynkman, M. K.

TITLE: Determination of parameters of the recombination centers in CdS, CdSe, and CdS_x-$CdSe_{1-x}$ single crystals

SOURCE: Ukrayins'ky*y fizy*chny*y zhurnal, v. 9, no. 10, 1964, 1153-1157

TOPIC TAGS: recombination center parameter, CdS, CdSe, single crystal, method of light impact

ABSTRACT: By using the method of "light impact" published by the authors in Fizika Tverdogo Tela 5, 397 (1963), the concentrations were determined of the long lived recombination centers and of the cross sections of electron capture by them, in the photosensitive single crystals of CdS, CdSe, and CdS_x-$CdSe_{1-x}$. Several channels of fast recombination were found in these materials, the kinetics of which was studied by means of short pulses of 2×10^{-7} sec. duration produced by a spark discharge in a capillary. The cross sections for the electron capture

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L 24156-65
ACCESSION NR: AP4048873

3

at the corresponding levels were determined. The study of the kinetics of the decay of the photoflux in the region of temperature quenching permitted the determination of the depth of the levels of the recombination centers in CdSe (approx. 0.6 ev). It is shown that these levels in CdS are not connected with the dislocations in crystals. "The authors are grateful to the academician AN USSR V. E. Laskkarev for a discussion, and the engineer I. Ya. Gorodetzkiy for help with the measurements." Orig. art. has: 1 figure, 2 tables

ASSOCIATION: Instytut napivprovidnykiv AN URSR, Kiev (Institute of Semiconductor, AN URSR)

SUBMITTED: 25Jun64 ENCL: 00

SUB CODE: MT, IC NO REF SOV: 002 OTHER: 001

Card 2/2

L 24917-65 EWT(l)/EWG(k)/EWT(m) /T/EWP(b)/EWA(h)/EWP(t) Pz-6/Peb EIJP(c)
JD/AT

ACCESSION NR: AP5003409 S/0181/65/007/001/0028/0032

AUTHOR: Sheynkman, M. K.

TITLE: Possibility of Auger recombination by multiply-charged centers in germanium and silicon

SOURCE: Fizika tverdogo tela, v. 7, no. 1, 1965, 28-32

TOPIC TAGS: impact recombination, silicon, germanium, electron capture, hole capture, forbidden band

ABSTRACT: An analysis of the experimentally measured cross sections with a capture of an electron by the impurities Mn, Ni, Co, Au, Ag, Cu, Fe, Ga, and Al in germanium and Zn, Au, In, Ga, and B in silicon has been made with an aim at ascertaining the influence and size of Auger (impact) recombination, as compared with multiple-phonon or radiative recombination. The recombination process is regarded, following L. Bess (Phys. Rev. v. 111, 129, 1958), as consti-

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L 24917-65

ACCESSION NR: AP5003409

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tuting capture of a free carrier accompanied by the transfer of a localized carrier of opposite sign into the corresponding band. The analysis is confined to the capture of a hole by a doubly negatively charged center (for example, Fe^{2-} in Ge). An Auger mechanism wherein the recombination energy acquired by capturing a carrier in one center is transferred to a carrier localized in a neighboring center, which in turn is transferred to the band is also considered. Some experimental consequences of impact recombination and possible means of evaluating its effect are discussed. "The author thanks V. Ye. Lashkarev, E. I. Rashba, Ye. A. Sal'kov, and K. D. Glinchuk for interest in the work and for a discussion." Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Institut poluprovodnikov AN UkrSSR, Kiev (Institute of Semiconductors AN UkrSSR)

SUBMITTED: 01Jun64 ENCL: 00 SUB CODE: SS

NR REF SOV: 017 OTHER: 009

Card 2/2

L 10395-67 EWT(m)
ACC NR: AT7003120 SOURCE CODE: UR/0097/66/000/009/0001/0005

AUTHOR: Kostyukovskiy, M. G. (Candidate of technical sciences); Sheynkman, V. S. (Engineer); Karganov, G. A. (Engineer); Rozhdestvenskiy, I. I. (Engineer)

ORG: Central Scientific-Research Institute for Industrial Structures (TsNII promzdaniy)

TITLE: Use of higher-grade concretes in prefabricated reinforced concrete sections for industrial buildings

SOURCE: Beton i zhelezobeton, no. 9, 1966, 1-5

TOPIC TAGS: reinforced concrete, concrete

ABSTRACT: In the preparation of standardized prefab sections, the possibility of increasing the strength of concrete of grades 400-500 has not been fully exploited. These grades are suitable for: columns up to 7.2 meters high for live loads (grade 400); square columns spaced 12 meters apart in buildings with overhead cranes (grade 400); trusses made of grade 500 concrete for greater load capacity without increased dimensions. Grade 600 concrete can be used where greater strength is desired in conjunction with the use of lesser amounts of concrete, such as in slotted columns with 12-meter spans for buildings with overhead cranes, 24-meter-span trusses for loads of 350 kg/m^2 and higher (with 12-meter spans), 30-meter trusses with uniform loading, 3 x 12-meter slabs.

Although grade 800 concrete can be used for various sections, such as 30-meter trusses, 3 x 12-meter slabs and 18-meter girders with some decrease in the volume of concrete, tests have shown that concretes of grade 700 and higher are not feasible for wide use in prefabrication techniques because of unsatisfactory technology and manufacturing procedures. For this reason further research with these higher-grade concretes must be undertaken. Orig. art. has: 4 figures and 5 tables.

SUB CODE: 11 / SUBM DATE: none [JPRS: 38,961]

Card 1/1 UDC: 691.328

SHEYNKOP, I.M., inzh.; KUTUKOV, S.S., kand.tekhn.nauk; SOKOLOV, A.A., doktor tekhn.nauk

Method of determining the optimum cross-section of the feeder channel. Stek. i ker. 21 no.10:18-19 O '64. (MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut steklovolokna (for Sheynkop, Kutukov). 2. Moskovskiy institut khimicheskogo mashinostroyeniya (for Sokolov).

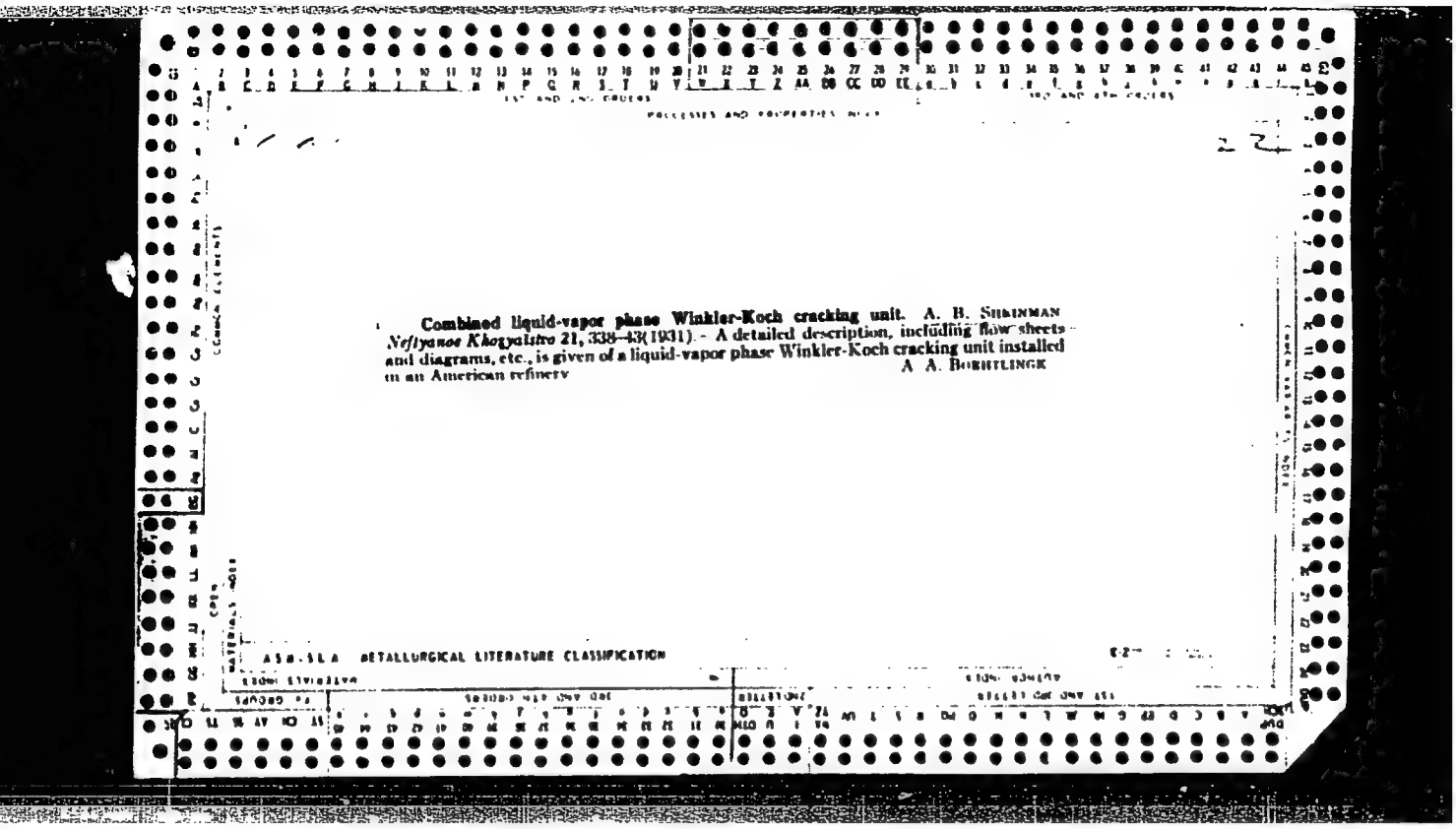
PELIPENKO, V.; SHEYNMAN, A., inzh.-konstruktor

Redesign of the swivel-bearing arrangement of the floating crane "Bleikhert." Rech. transp. 22 no.11:50 N '63. (MIRA 16:12)

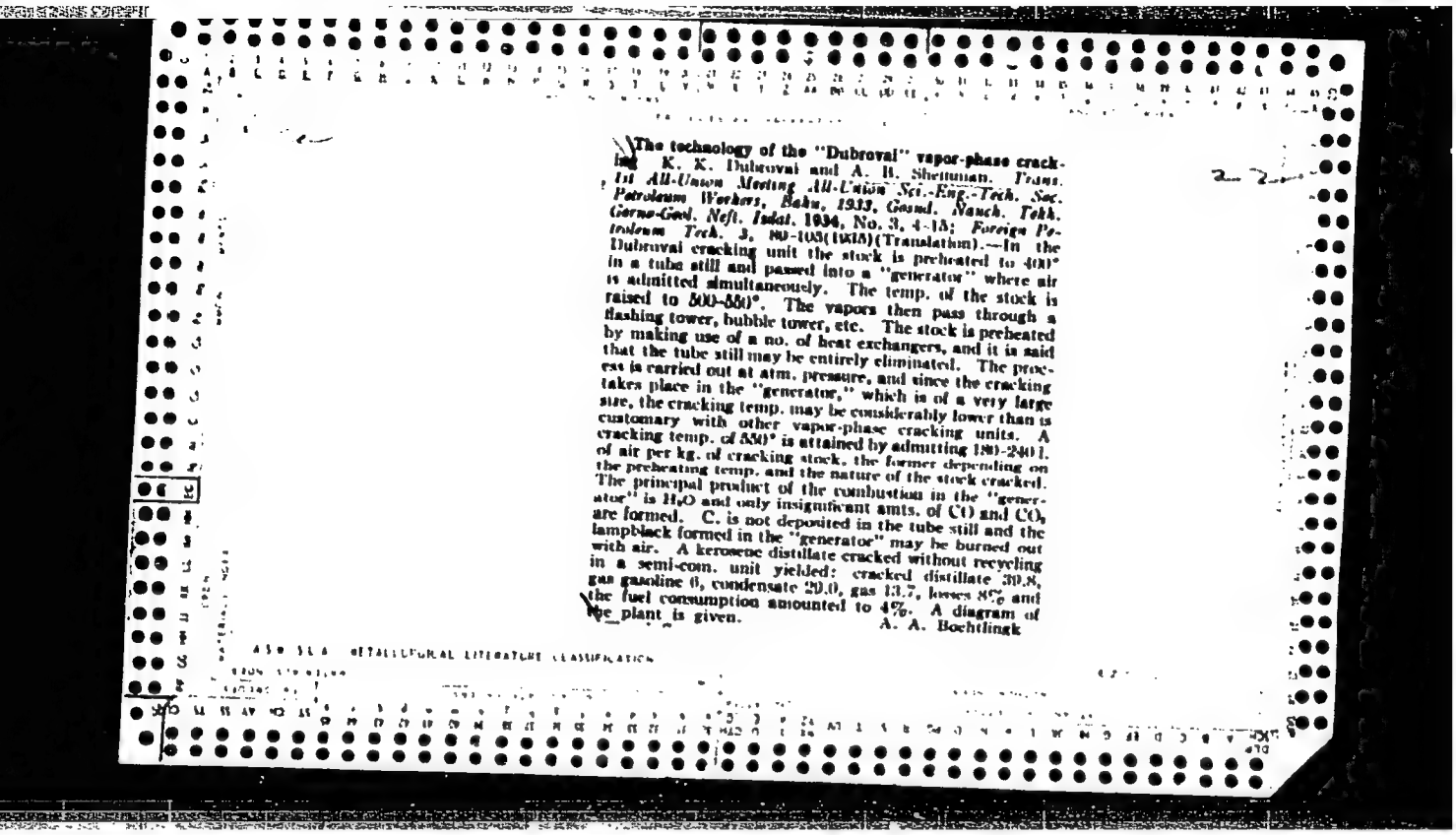
1. Glavnyy inzh, Kiyevskogo porta (for Pelipenko).

SOLODUKHO, Yakov Yudelevich; SHEYNMAN, A.A., inzh., red.; KISELEVA, T.I., red.izd-va; ISLENT'YEVA, P.G., tekhn.red.

[Automatic control of electric drives for continuous hot rolling mills] Avtomatika elektroprivodov nepreryvnykh stanov goriachei prokatki. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 110 p. (MIRA 13:2)
(Rolling mills--Electric driving) (Automatic control)

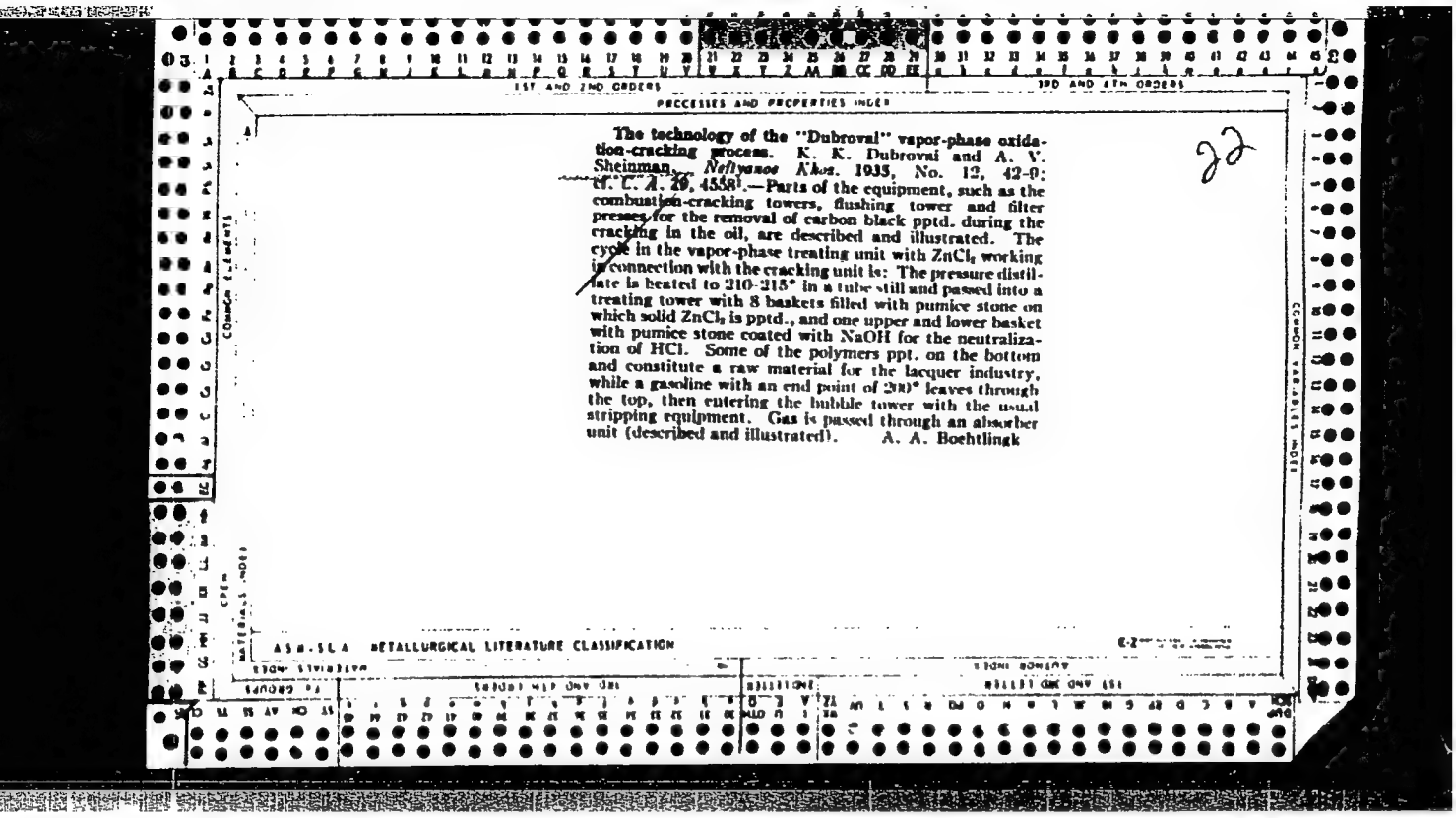


Combined liquid-vapor phase Winkler-Koch cracking unit. A. B. Shainman *Neftyanoe Khozyaistvo* 21, 338–43(1931). - A detailed description, including flow sheets and diagrams, etc., is given of a liquid-vapor phase Winkler-Koch cracking unit installed in an American refinery
A. A. Boehtlingk



The technology of the "Dubroval" vapor-phase cracking. K. K. Dubroval and A. B. Shettuman. *Trans. 1st All-Union Meeting All-Union Sci.-Eng.-Tech. Soc. Petroleum Workers, Baku, 1933. Gosud. Nauch. Tekh. Gorno-Geol. Neft. Izdat.* 1934, No. 3, 4-15; *Foreign Petroleum Tech.* 3, 89-103(1935)(Translation).—In the Dubroval cracking unit the stock is preheated to 400° in a tube still and passed into a "generator" where air is admitted simultaneously. The temp. of the stock is raised to 500-550°. The vapors then pass through a flashing tower, bubble tower, etc. The stock is preheated by making use of a no. of heat exchangers, and it is said that the tube still may be entirely eliminated. The process is carried out at atm. pressure, and since the cracking takes place in the "generator," which is of a very large size, the cracking temp. may be considerably lower than is customary with other vapor-phase cracking units. A cracking temp. of 550° is attained by admitting 180-240 l. of air per kg. of cracking stock, the former depending on the preheating temp. and the nature of the stock cracked. The principal product of the combustion in the "generator" is H_2O and only insignificant amts. of CO and CO_2 are formed. C is not deposited in the tube still and the lampblack formed in the "generator" may be burned out with air. A kerosene distillate cracked without recycling in a semi-cont. unit yielded: cracked distillate 30.8, gas gasoline 0, condensate 20.0, gas 13.7, losses 8% and the fuel consumption amounted to 4%. A diagram of the plant is given.

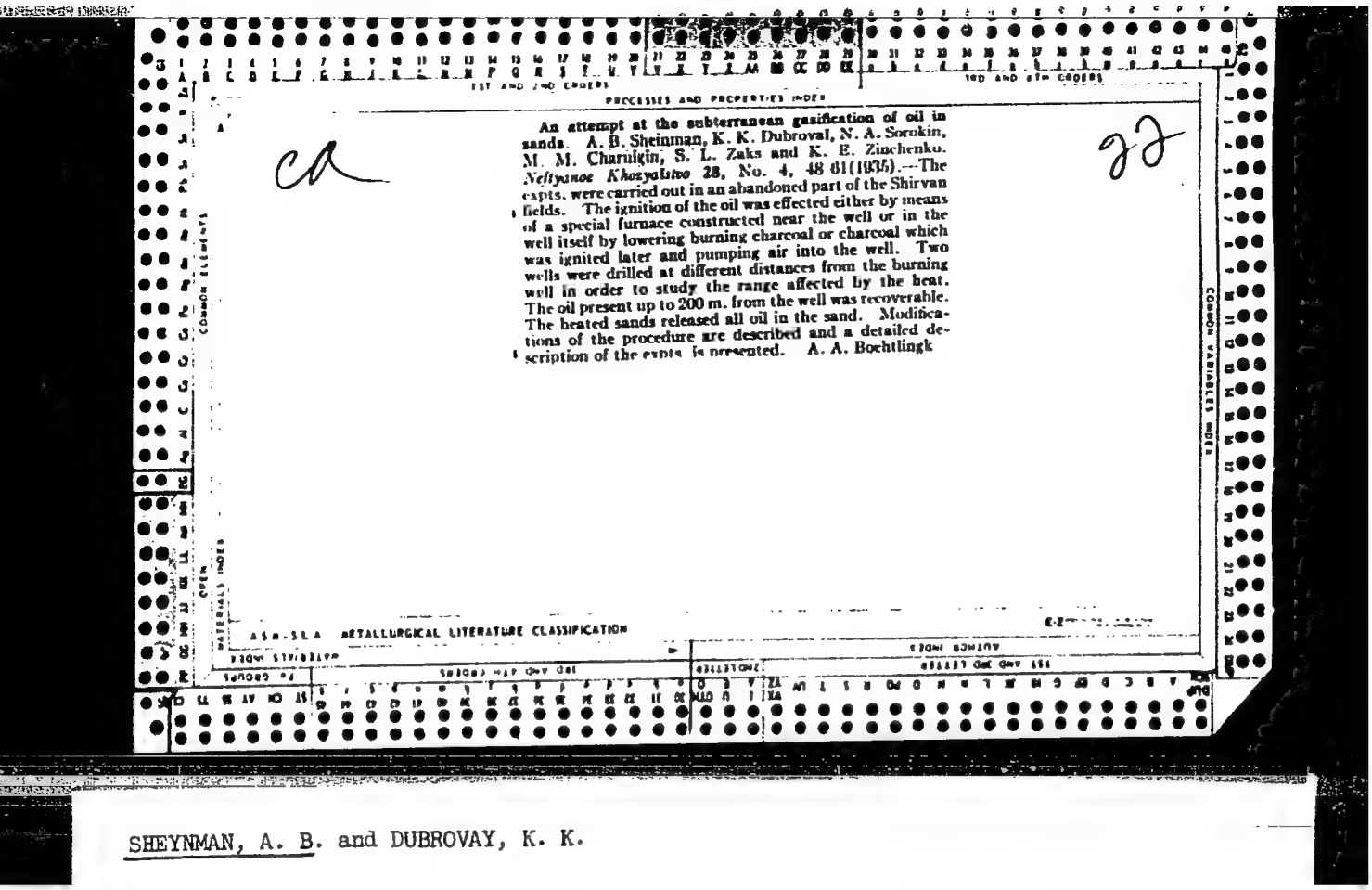
A. A. Boehtlingk



PROCESSES AND PROPERTIES INDEX

The technology of the "Dubroval" vapor-phase oxidation-cracking process. K. K. Dubroval and A. V. Sheinman. *Neftyanoe Khoz.* 1935, No. 12, 42-9; cf. C. A. 29, 4558[1].—Parts of the equipment, such as the combustion-cracking towers, flushing tower and filter presses for the removal of carbon black pptd. during the cracking in the oil, are described and illustrated. The cycle in the vapor-phase treating unit with $ZnCl_2$ working in connection with the cracking unit is: The pressure distillate is heated to 210-215° in a tube still and passed into a treating tower with 8 baskets filled with pumice stone on which solid $ZnCl_2$ is pptd., and one upper and lower basket with pumice stone coated with NaOH for the neutralization of HCl. Some of the polymers ppt. on the bottom and constitute a raw material for the lacquer industry, while a gasoline with an end point of 200° leaves through the top, then entering the bubble tower with the usual stripping equipment. Gas is passed through an absorber unit (described and illustrated). A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

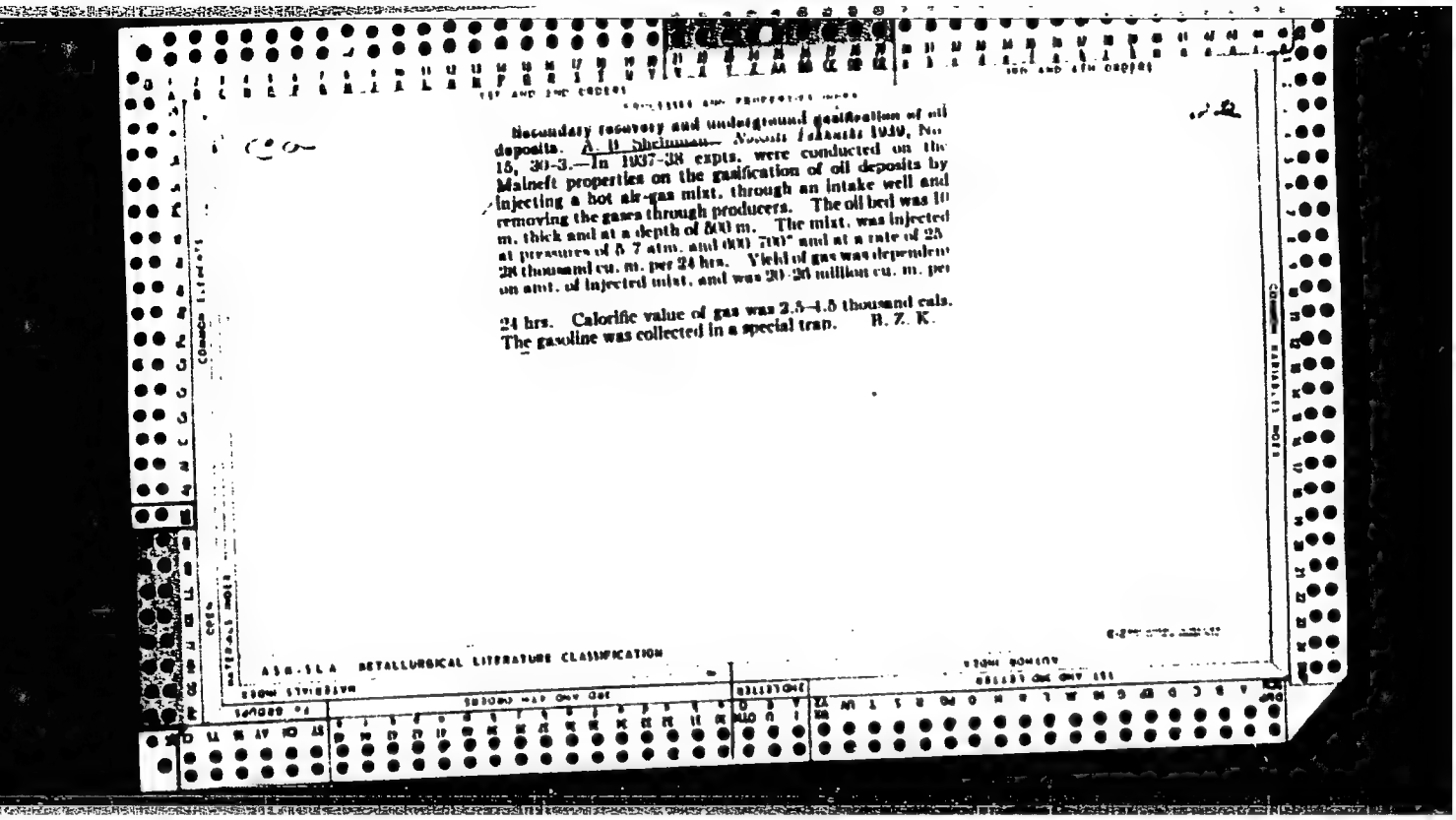
ca

22

An attempt at the subterranean gasification of oil in sands. A. B. Sheinman, K. K. Dubroval, N. A. Sorokin, M. M. Charulgin, S. L. Zaks and K. E. Zinchenko. *Neftyanoe Khozyaistvo* 28, No. 4, 48-61(1935).—The expts. were carried out in an abandoned part of the Shirvan fields. The ignition of the oil was effected either by means of a special furnace constructed near the well or in the well itself by lowering burning charcoal or charcoal which was ignited later and pumping air into the well. Two wells were drilled at different distances from the burning well in order to study the range affected by the heat. The oil present up to 200 m. from the well was recoverable. The heated sands released all oil in the sand. Modifications of the procedure are described and a detailed description of the expts. is presented. A. A. Boehtlingk

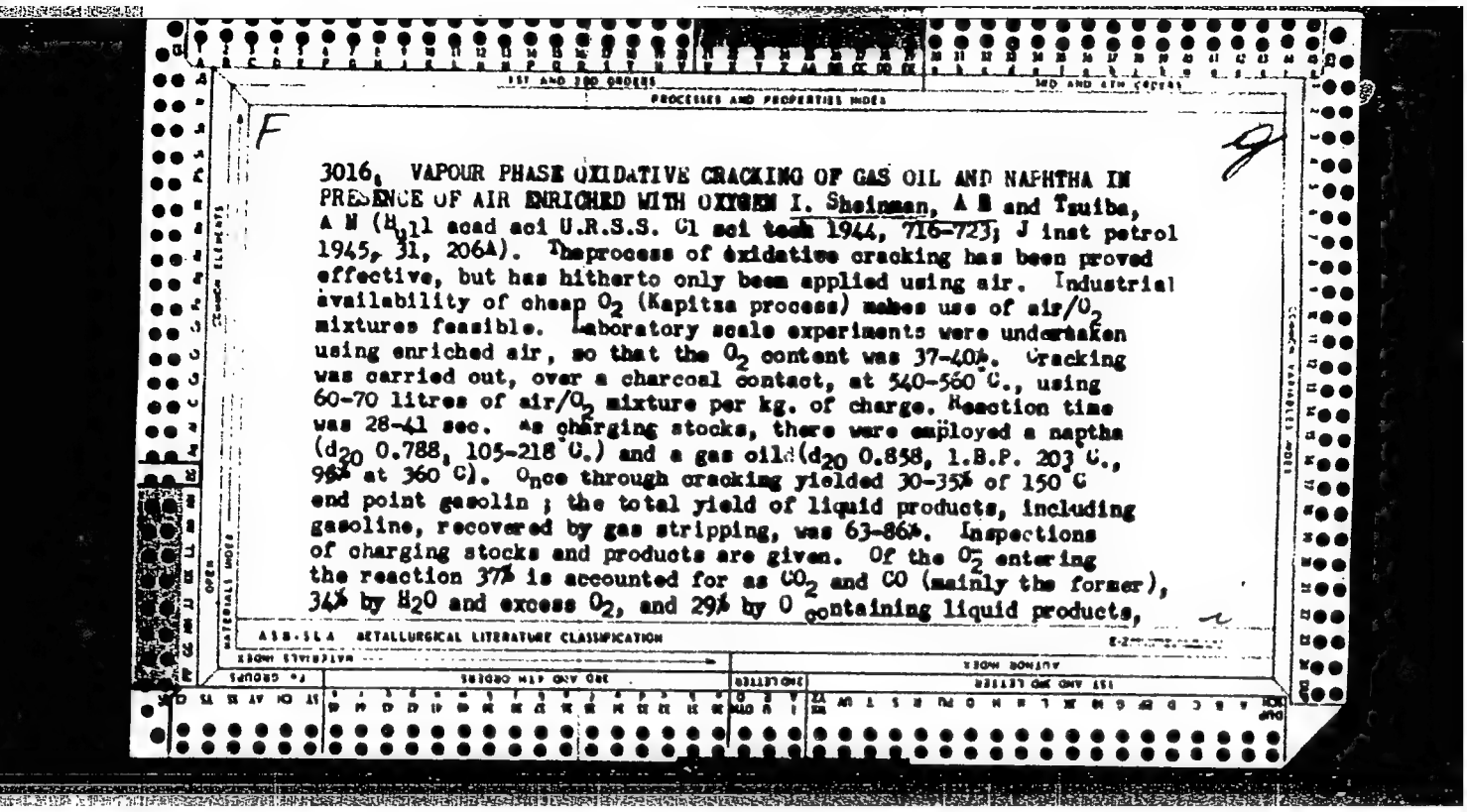
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SHEYNMAN, A. B. and DUBROVAY, K. K.



Secondary recovery and underground gasification of oil deposits. A. D. Shelimov. *Neftyanik* [Petroleum Worker] 1939, No. 15, 30-3.—In 1937-38 expts. were conducted on the Malneft properties on the gasification of oil deposits by injecting a hot air-gas mixt. through an intake well and removing the gases through producers. The oil bed was 10 m. thick and at a depth of 800 m. The mixt. was injected at pressures of 5-7 atm. and 600-700° and at a rate of 25-28 thousand cu. m. per 24 hrs. Yield of gas was dependent on amt. of injected mixt. and was 20-26 million cu. m. per 24 hrs. Calorific value of gas was 2.5-4.5 thousand cals. The gasoline was collected in a special trap. R. Z. K.

A53-51A METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

F

3016. VAPOUR PHASE OXIDATIVE CRACKING OF GAS OIL AND NAPHTHA IN PRESENCE OF AIR ENRICHED WITH OXYGEN I. Sheinman, A B and Tsuiba, A M (Bull acad sci U.R.S.S. Cl sci tech 1944, 716-723; J inst petrol 1945, 31, 206A). The process of oxidative cracking has been proved effective, but has hitherto only been applied using air. Industrial availability of cheap O_2 (Kapitza process) makes use of air/O_2 mixtures feasible. Laboratory scale experiments were undertaken using enriched air, so that the O_2 content was 37-40%. Cracking was carried out, over a charcoal contact, at 540-560° C., using 60-70 litres of air/O_2 mixture per kg. of charge. Reaction time was 28-41 sec. As charging stocks, there were employed a naptha (d_{20} 0.788, 105-218° C.) and a gas oil (d_{20} 0.858, I.B.P. 203° C., 96% at 360° C). Once through cracking yielded 30-35% of 150° C end point gasolin ; the total yield of liquid products, including gasoline, recovered by gas stripping, was 63-86%. Inspections of charging stocks and products are given. Of the O_2 entering the reaction 37% is accounted for as CO_2 and CO (mainly the former), 34% by H_2O and excess O_2, and 29% by O containing liquid products,

A38-51A METALLURGICAL LITERATURE CLASSIFICATION

SHEYMAN, A. B.

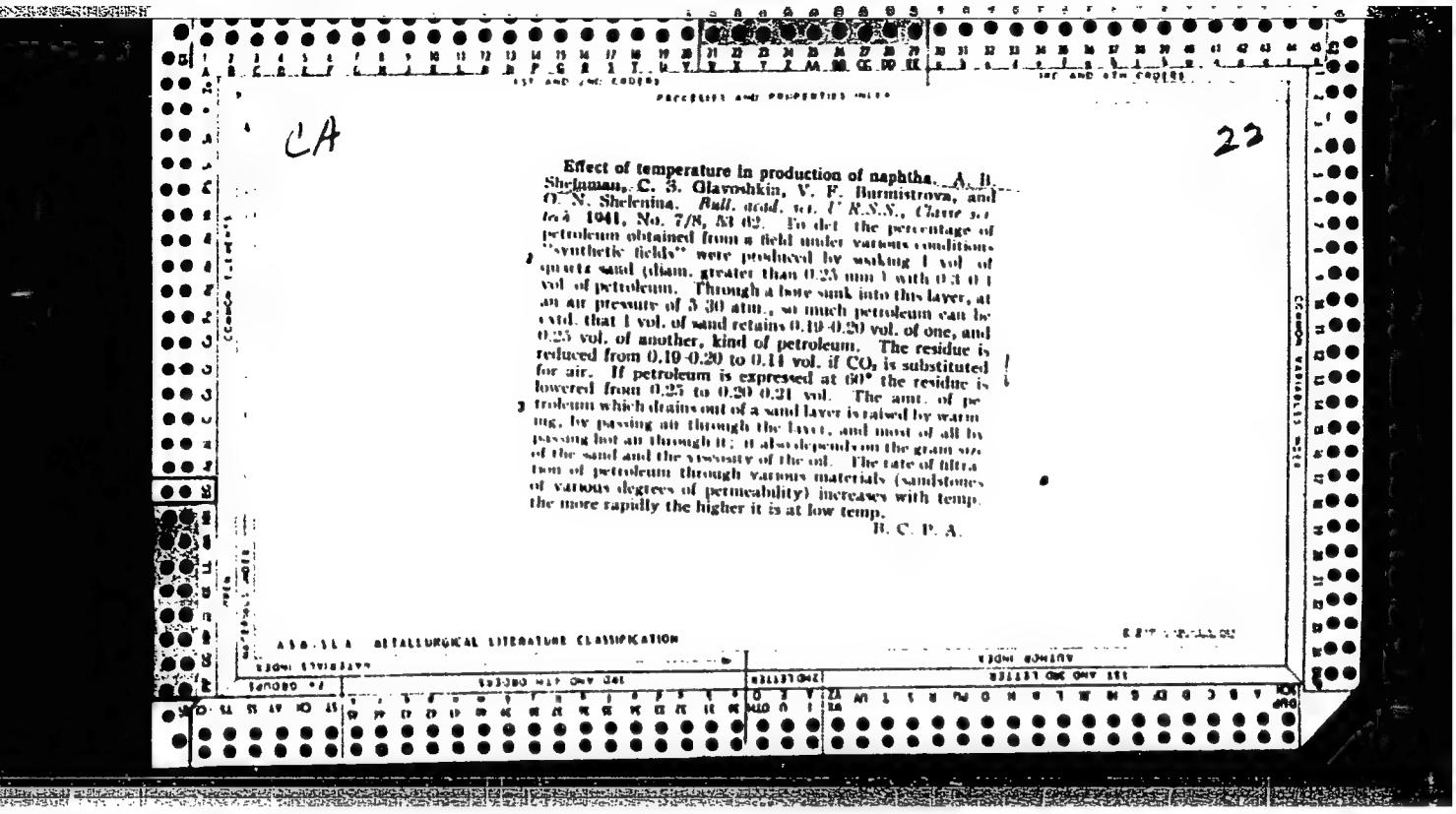
600

1. SHEYMAN, A. B.; GLAVOSHKIN, Kh. S.; BURMISTROVA, V. F. ; ZHELENINA, C. N.

2. USSR (600)

"Temperature Factor in Oil Extraction," Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No. 7-8, 1941. Institute of Mineral Fuels Academy of Sciences USSR, submitted 4 Jan 1941.

9. [redacted] Report U-1530, 25 Oct. 1951.



CA

22

Effect of temperature in production of naphtha. A. B. Shelaman, C. S. Glavoshkin, V. F. Burmistrova, and O. N. Shelenina. *Bull. acad. sci. U.R.S.S., Classe sci. tech.* 1941, No. 7/8, 81-92. To det. the percentage of petroleum obtained from a field under various conditions "synthetic fields" were produced by soaking 1 vol. of quartz sand (diam. greater than 0.25 mm.) with 0.3-0.4 vol. of petroleum. Through a hose sunk into this layer, at an air pressure of 5-30 atm., so much petroleum can be extd. that 1 vol. of sand retains 0.19-0.20 vol. of one, and 0.25 vol. of another, kind of petroleum. The residue is reduced from 0.19-0.20 to 0.14 vol. if CO_2 is substituted for air. If petroleum is expressed at 60° the residue is lowered from 0.25 to 0.20-0.21 vol. The amt. of petroleum which drains out of a sand layer is raised by warming, by passing air through the layer, and most of all by passing hot air through it; it also depends on the grain size of the sand and the viscosity of the oil. The rate of filtration of petroleum through various materials (sandstones of various degrees of permeability) increases with temp. the more rapidly the higher it is at low temp.

B. C. P. A.

SHEYNMAN, A. B. and TSYBA, A. M.

Laboratory of Vapor-Phase Oxidation Cracking,
Institute of Mineral Fuels, Academy of Sciences USSR (-1944-)

"Vapor-Phase Oxidation Cracking of Gas Oil and Ligroin in the Presence of Exygen Engriched Air"- Report 1.
Iz Ak. Nauk. SSSR. Otdel, Tekh. Nauk.
Nos. 10-11, 1944

BR-52059019

SHEYNMAN, A B.

SHEYNMAN, A B

Experimental study of the thermal recovery of crude oil. G. M. Belova and A. B. Sheinman. *Trudy Inst. Nefti, Akad. Nauk S.S.S.R.* 5, 145–54(1955).—Natural sandstone contg. strongly oxidized oil (4–6% of dry sand) which could not be extd. by blowing with air or by boiling with water was heated in a retort in the absence of air at a max. temp. of 450°. At temps. up to 200°, not less than 70% oil was recovered and the residual oil content was 1.5–3.5% of the dry sand. At temps. up to 450°, recovery was 84–93% and the residual oil content was 0.5–1.8%. Under otherwise identical conditions the degree of recovery depends on the original viscosity of the oil; hence, the higher the viscosity of the oil in the formation, the higher should be the temp.

B. Z. Kamich

Geo

2

TSYBA,A.N.; SHEYNMAN,A.B.

Chemical composition of the aromatic part of gasolines obtained by oxidation cracking and reforming. Trudy Inst.neft no.6:12-19 '55.
(Gasoline) (MLRA 8:12)

SHEYNMAN, A. B.

with A. I. Sergeyev "Experimental Study of Burning in a Petroleum Saturated Sand Layer" pp. 228-239

Transactions of the Petroleum Institute, Acad. Sci. USSR, v. 11, Oil Field Industry, Moscow, Izd-vo AN SSSR, 1958. 346pp.

14(5) SOV/92-58-8-9/36

AUTHORS: Sheynman, A.B., Sergeyev, A.I., and Shenayeva, V.I., Members of the Petroleum Institute

TITLE: Thermal Treatment of Oil Wells (Teplovaya obrabotka neftyanykh skvazhin)

PERIODICAL: Neftyanik, 1958, Nr 8, pp 13-15 (USSR)

ABSTRACT: The Petroleum Institute of the Academy of Science of the USSR has studied the effect of the bottom-hole heating in oilfields of the Kinel'neft' Petroleum Production Administration. Experiments, made under conditions stipulated in Table 1, have indicated that among several methods of heating bottom-holes (hot oil or steam flushing, thermal acid treatment, electrical heating, etc.) the electrical heating with the device shown in Fig. 1 produces the best result. Conditions under which the electric heater described by the author was used are given in Table 2 and the effect of heating in Fig. 2. As a result of experiments all the wells increased their petroleum output. Fig. 3 shows the design of

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the electric heater installed under the pumping unit, and used for continuous heating of the bottom-hole. While in oilfields of the Stanislavneft' organization the bottom-hole heating increased the petroleum flow 1.5 - 3 times, in some wells of the Sakhalin oil-fields it speeded the petroleum flow up to 13 times. Moreover, in some cases wax deposits were melted not only in bottom-holes, but also in pressure pump tubes, and the effect of heating lasted several months. On the basis of experiments it can be said that the use of a mobile 25-30 kwt heater suitable for 8", 6", or 4" wells is desirable, and that a temperature around 150° C must be maintained at the bottom-hole. An independent, durable and flexible oil gas resistant wire rope should be employed to suspend the electric heater. There are 3 figures and 3 tables.

ASSOCIATION: Institute nefti AN SSSR (The Petroleum Institute of the Academy of Science of the USSR)

SHEYNMAN, A.B.; SERGEYEV, A.I.; SHENAYEVA, V.I.

Heat treatment of oil wells. Biul. tekh.-ekon.inform. no.9:7-9 '58.
(MIRA 11:10)

(Oil wells)

SHEYNMAN, A.B.; GLUSHKEV, V.Ye.

Karl Karlovich Dubrovai; obituary.. Trudy Inst.nefti 12:372-374 '58.
(MIRA 12:3)

(Dubrovai, Karl Karlovich, 1888-1957)

SOV/93-58-8-10/15

AUTHOR: Sergeyev, A. I. and Sheynman, A. B.

TITLE: Depth Heaters (Glubinnyye nagrevatel'nyye ustroystva)

PERIODICAL: Neftyanoye khozyaystvo, 1958, 36 Nr 8, pp. 46-53 (USSR)

ABSTRACT: The article presents data on Soviet and American depth heaters for oil wells. Stepanchikov's burner [Ref. 1], operating on the principle of flame propagation, is of limited capacity and lacks direct temperature control. It is also inclined to produce soot and contaminate the well. The American model of gas burner for underground generation of heat, presented by Fig. 1, fades out and ignites easily at low depths [Ref. 2]. Another American model presented by Fig. 2 and tested in a depleted formation has markedly increased the yield of the formation [Ref. 3]. The Institut nefti AN SSSR (Petroleum Institute, Academy of Sciences, USSR) has designed a gas burner which is supposed to satisfy most of the requirements. This

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burner, shown in Fig. 3, operates on the kinetic principle of fuel burning and its special feature is that the air-gas mixture which is introduced to the combustion area is prepared in advance. A triple cable of the KTSh-2 type delivers the electric power to the ignition and transmits the data recorded by the thermocouple which is located at the cutlet of the burner. This burner has been subjected to laboratory bench, and industrial tests. The laboratory tests have shown that a burner 1,000-mm. long at 30 atm. and 300° can have a heat capacity of 190,000 ÷ 380,000 kilocalories/hr. and a volumetric capacity of 2,000 ÷ 4,000 normal cu. m./hr. They have also determined that the change in heat capacity and volumetric capacity is directly proportional to changes in the length of the burner or in the pressure. The bench tests have disclosed that combustion proceeds

evenly without explosions and without drastic pressure rise in the system, and it is characterized by temperature jumps. During the tests the air was delivered by means of a UPK-80 compressor. The bench test results are shown in Table 1 and Fig. 4. The industrial tests have shown that it is expedient to employ this type of burner under fixed conditions at a time when the entire formation has been stimulated and heating substances injected in it. The temperature curve during the burner operation under industrial conditions is shown in Fig. 5. The Petroleum Institute, Academy of Sciences USSR in cooperation with Giproneftemash has also designed a depth burner (Fig. 6) for preventing paraffin and tar deposition in the well. This unit was tested at the Yablonovskiy oilfield of the Kinel'neft' NPU and the results are shown in Tables 2 and 3. The tests have shown that this unit satisfies the industrial requirements. The Institute has designed another burner

(Fig. 7) for installation in the well under a deep well pump so that the bottom hole heating and oil production proceed simultaneously. In this unit the current is conducted by a PUM brand copper conductor. The test results for these units will be published in detail in a separate article. The authors conclude that this study of thermal devices for the stimulation of oil production points out the need for further improvements in this field. There are 7 figures, 3 tables, and 3 references, of which 1 is Soviet and 2 are English.

1. Petroleum--Production 2. Wells--Heating 3. Heaters --Performance 4. Heaters--Test results

SHEYNMAN, A.B.; SERGEYEV, A.I.

Subsurface heating devices. Trudy Inst. geol. i razrab. gor. iskop. 2:177-193 '60. (MIRA 14:5)
(Oil wells—Equipment and supplies)

Inst Geology & Processing of Mineral Fuels

SEJNMAN, A.B. [Sheynman, A.B.]; GLUSHNEV, B. E. [Glushnev, B.E.]

Karoly Dubrovai; obituary. Magy kem lap 15 no.2:61 F '60.

MALOFEYEV, G.Ya; SERGEYEV, A.I.; SHEYNMAN, A.B.

Experimental study of the electric heating of a well bottom zone.
Neft. khoz. 38 no.12:39-44 D '60. (MIRA 14:4)
(Oil fields--Production methods)

SHEYNMAN, Aleksandr Borisovich; SERGEYEV, Aleksandr Ivanovich; MALOFEYEV, Gurly Yevdokimovich; AMIYAN, V.A., red.; VATOLIN, G.N., ved. red.; VORONOVA, V.V., tekhn. red.

[Electric heat treatment of oil well bore zones]Elektroteplovaia obrabotka prizaboinoi zony neftianykh skvazhin. Moskva, Gostoptekhizdat, 1962. 98 p. (MIRA 15:5)
(Oil fields—Production methods)

MALOFEYEV, G.Ye.; SHEYNMAN, A.B.

Calculating the reservoir oil yield when injecting hot water.
Neft. khoz. 41 no.3:31-35 Mr '63. (MIRA 17:11)

SHEYNMAN, A.B.; MALOFEYEV, G.Ye.; SERGEYEV, A.I.

Investigating heating of the well-bottom zone in the presence of fluid inflow. Neft. khoz. 42 no.1:37-42 Ja'64.
(MIRA 17:5)

SIMKIN, E.M.; KALUGIN, V.D.; RAKHIMOV, A.R.; SHEYNMAN, A.B.

Electric heating of well bottom zones in the South Alamyshik field. Nefteprom. delo no.8:16-19 '65. (MIRA 18:9)

1. Institut geologii i razrabotki goryuchikh iskopayemykh, Moskva, i ob"yedineniye "Fergananeftegaz".

SHEYNMAN, A. D. and TSYBA, A. N.

"Chemical Composition of Aromatics Contained in Gasoline Produced by Oxidative Cracking and Reforming," Trudy Inst. Nefti, No.6, 1955

Translation D 411562

MIGALOVSKAYA, G.N.,; SHEYNMAN, A.I.

Obstetric forceps. Akush. i gin. no.6:23-27 N-D '55 (MLRA 9:6)

1. Iz rodil'nogo doma imeni V.S. Snegireva (glavnyy vrach L.I. Krotova, nauchnyy rukovoditel' prof. M.A. Petrov-Maslakov) Leningrad.
(OBSTETRIC, appar. and instruments
Muzo's forceps)

82447

9.9100

S/141/60/003/03/002/014
E192/E382

AUTHORS: Vilenskiy, I.M., Chernyshov, V.P. and Sheynman, D.I.

TITLE: Distortion of the Modulation of High-power Radio Waves During the Propagation in the Ionosphere (Experimental Investigation). Part I.

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1960, Vol. 3, No. 3, pp. 367 - 374

TEXT: An investigation of the change of the modulation depth of an amplitude-modulated wave at the carrier frequency of 200 kc/s was carried out by J.W. King (Ref 6). It is considered, however, that the results obtained by J.W. King are not fully satisfactory since they cannot be used in studying the dependence of the amplitude distortion on distance. Consequently, a more detailed study of the problem was undertaken. The measurements of the modulation depth were carried out simultaneously at three different points by means of three specially prepared measurement sets. One of the sets was situated in the vicinity of the transmitter and measured the modulation depth produced by the transmitter; the second was situated at a distance of 2 000 km (point 4) while the third set could be situated at various distances from the transmitter

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Distortion of the Modulation of High-power Radio Waves During the Propagation in the Ionosphere (Experimental Investigation). Part I.

(points 1,2,3). Since the antenna system of the transmitter produced practically no vertical radiation component, it could be assumed that the receiver situated in the vicinity of the transmitter received only the surface wave whose modulation depth was the same as that of the transmitter. In order to secure the measurement of the modulation changes with an error of 0.5% it is necessary to employ the measuring sets of very high stability. The measurement of the carrier level was performed by means of a linear voltmeter employing a copper oxide rectifier. The voltage obtained at the output of the rectifier circuit was applied to a 2-stage low-frequency amplifier, fitted with RC filters. These bandpass filters were tuned to frequencies of 40, 80, 160 and 600 cps. The output of the amplifier was fed to a peak voltmeter which was measuring the magnitude of the envelope of the investigated signal. The modulation depth was determined by comparing the readings of the linear and the peak voltmeters. The experimental investigation of the

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S/141/60/003/03/002/014
E192/E382

Distortion of the Modulation of High-power Radio Waves During the Propagation in the Ionosphere (Experimental Investigation). Part I.

amplitude distortion due to the propagation of the waves in the ionosphere was conducted during the period from April 24, 1959 to June 18, 1959. A powerful radio station operating at the frequency of 236 kc/s was employed as the transmitter, the modulation frequencies being 80, 160 and 600 cps. The modulation depth was approximately 80%. During the above period 30 observations were effected at night-time, the duration of each being 15 minutes (5 minutes for each audio frequency). All the 30 transmissions were received at the distance L = 2100 km (point 4). Ten transmissions were observed at the distances of 400, 700 and 1500 km from the receiver. The experimental results are given in Tables 1, 2, 3 and 4 and in Figures 1, 2 and 3. Tables 1, 2 and 3 shows the average relative values of the modulation changes. From the tables it is seen that while the modulation changes for any one observation did not exceed 2%. the differences between various observations are quite considerable. Table 4 shows the average relative values

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S/141/60/003/03/002/014
E192/E382

Distortion of the Modulation of High-power Radio Waves During the Propagation in the Ionosphere (Experimental Investigation). Part I.

of the modulation change for all the observation points. It is seen that the distortion at points 1 and 2 was as high as 17%. The dependence of the modulation distortion on frequency is illustrated in Fig. 1, while Fig. 2 shows its dependence on distance. The nonlinear dependence of the magnitude of the distortion on the power of the transmitter is illustrated in Fig. 3.

The authors express their gratitude to G.S. Kharitonov, S.I. Volosnikov, B.I. Podlipalin, L.N. Ruchkan and V.P. Khoroshilov for their help in the preparation of the measuring equipment.

There are 4 tables, 3 figures and 6 references: 3 English and 3 Soviet.

ASSOCIATION: Novosibirskiy elektrotekhnicheskiy institut svyazi (Novosibirsk Electrotechnical Communication Institute)

SUBMITTED: December 14, 1959

Card 4/4

KUBLANOV, V.L., inzh.; SHEYNMAN, D.I., inzh.

Automatic machine for broaching butts of steel aluminum bearing bushings of diesel engines. Trakt. i sel'khozmash. 30 no.6:34-36 Je '60. (MIRA 13:11)

(Broaching machines) (Bearings (Machinery))

SHEYNMAN, D.I.

A device for measuring small indices of phase modulation. Izv.vys. ucheb.zav.; radiotekh. 5 no.5:640-642 S-O '62. (MIRA 15:11)

1. Rekomendovano kafedroy antenn i rasprostraneniya radiovoln Novisibirskogo elektrotekhnicheskogo instituta svyazi.
(Ionospheric radio wave propagation) (Radio measurements)

SHPYNKOV, V.I.

Measurement of relative phase shifts in shortwaves with frequency diversity. Trudy ucheb. inst. sviazi. no.16:39-46 '63. (MIRA 17:10)

1. Novosibirskiy elektrotekhnicheskiy institut svyazi.

TSESARSKAYA, S. I;MONOSZON, S. M;SHEYMAN, Ye. A;YAKHNIS, B. L;GOLDENBERG, A. I;GORLOVSKAYA, Ye. P;KLEBANOVA, M. A.

Role of roentgenological method in examination of children for B.C.G. vaccination. Probl. tuberk., Moskva no.4:31-36 July-Aug. 1950. (CLML 20:1)

1. (Candidate Medical Sciences S. I. Tserkaya -- Odessa Tuberculosis Institute; S. M. Monoszon and E. A. Sheyman -- Leningrad Tuberculosis Institute; Prof. B. L. Yakhnis and Candidate Medical Sciences A. Ya. Gol'berg -- Khar'kov Tuberculosis Institute; E. P. Gorlovskaya -- Kiev Tuberculosis Institute.

SHEYNMAN, E A

Excerpta Medica Sec 15 Tuberculosis and Pulmonary Diseases Vol. 8/8 Aug 55

1571. SHEYNMAN E.A. *Isolation of newborns vaccinated with BCG against tuberculosis (Russian text) SOVETSK. MED. 1954, 1 (26-28) Tables 1

The author states that an isolation of 6-8 weeks is necessary in newborns after the BCG vaccination before they come in contact with persons suffering from tb.

Palacký - Uh. Hradiste (VII, 15)

SHTERMAN, E.A.

SHTERMAN, E.A.: "The reaction of the older child organism to the administration of BCG-vaccine by the combined method". Leningrad, 1955. Leningrad State Order of Lenin Inst for the Advanced Training of Physicians imeni S.M. Kirov. Leningrad Sci Res Inst for Tuberculosis imeni A.Ya. Shternberg. (Dissertations for the Degree of Candidate of Medical Sciences).

SO: Knizhnaya letopis' No 44, 29 October 1955. Moscow.

GOL'DFARB, M.L.; GONCHAROVA, M.K.; SHEYNMAN, E.A.

Studying the effectiveness of BCG revaccination by intracutaneous and percutaneous methods. Prob.tub.no.4:3-8 Jl-Ag '55.(MLRA 8:10)

1. Iz organizatsionno-metodicheskogo otdela (zav.-kandidat meditsinskikh nauk M.L. Gol'dfarb) Leningradskogo nauchno-issledovatel'skogo Tuberkuleznogo instituta (dir.-doktor meditsinskikh nauk prof. A.D. Semenov)

(BCG VACCINATION, *eff.*,
on tuberculin reaction in intracutaneous and percutaneous methods)
(TUBERCULOIN REACTION
eff. of BCG vacc. in intracutaneous & percutaneous methods)

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SHEYNMAN, Lev Yefimovich, starshiy prepodavatel'; SHEKHTER, Vil'yam Leonidovich, inzh.; GOLOVANOV, Robert Dmitreyevich, inzh.; SHUMSKIY, Vladislav Vasil'yevich, inzh.

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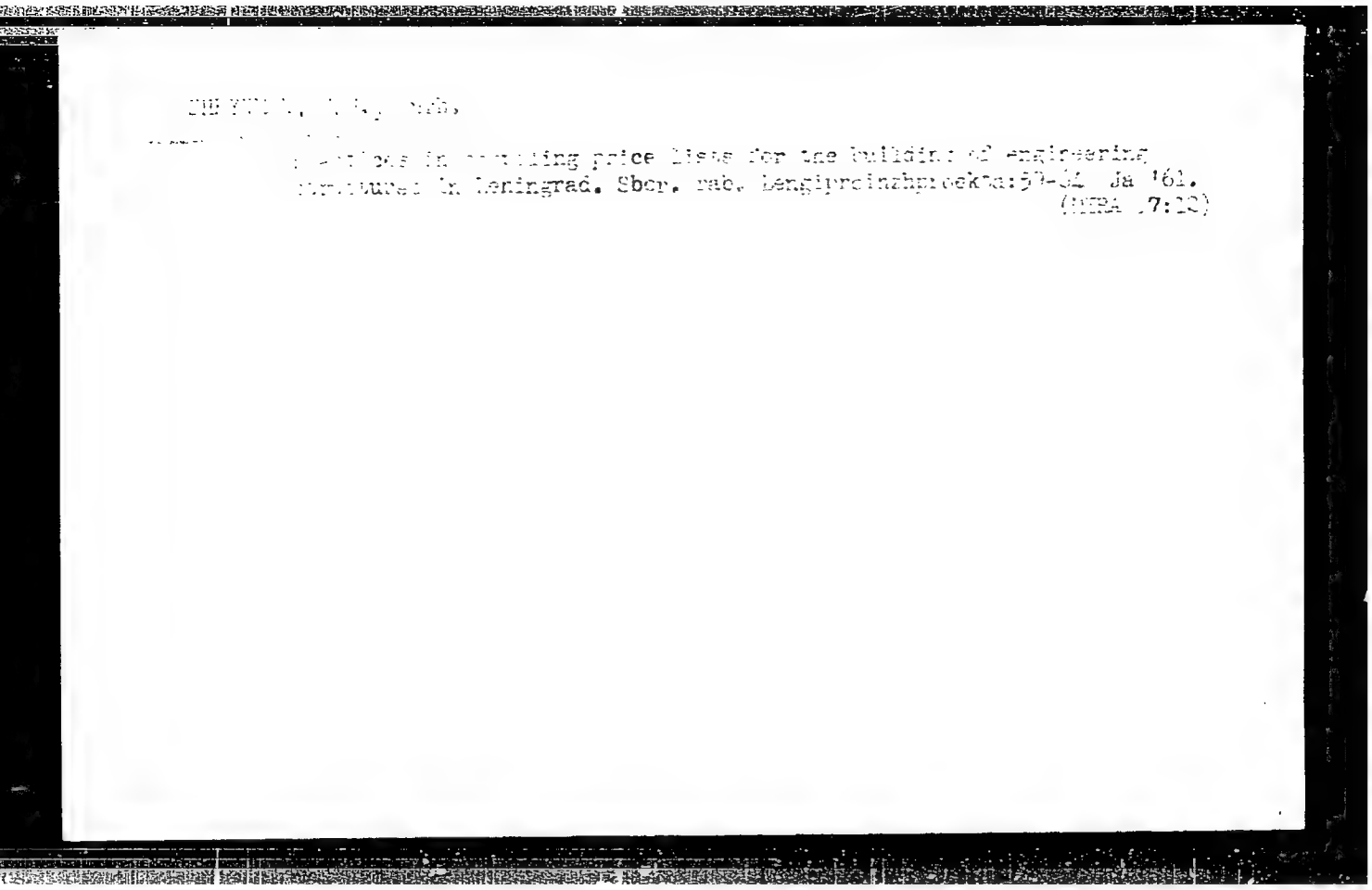

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Nomograph for calculating equipment in designing continuous lines for the production of multiple articles. Vest.mashinostr. 42 no.8:78-80 Ag '62. (MIRA 15:8)
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SHEYNMAN, Remual'd Petrovich; ZEMLEGLYADOV, Konstantin Grigor'yevich; NOVIKOVA, E.N., red.; TELYASHOV, R.Kh., red. izd-va; GVIRTS, V.L., tekhn. red.

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SOV/169-59-5-4562

Translation from: Referativnyy zhurnal, Geofizika, 1959, Nr 5, p 42 (USSR)

AUTHORS: Sheynmann, S.M., Frantov, G.S.

TITLE: Magnetic Dipole Above a Double-Layer Medium. On the Geologic Mapping by Means of Aeroelectric Prospecting

PERIODICAL: Tr. Vses. n.-i. in-ta metodiki i tekhn. razvedki, 1958, Nr 1, pp 161 - 188

ABSTRACT: Comparing the various methods of aeroelectric prospecting, the authors come to the conclusion that using, as source of the field, closed loops with alterating current of audio frequency offers the most suitable for practice method, if the closed loops are moving together with the aircraft, as well as the receiver of the field. Basing on the described method, the authors analyze the field of a magnetic dipole above the original rocks covered with the overburden having a good conductivity. The developed theory can be applied to media, which are not bounded in horizontal directions. If the structure of the ground is more complicated, the method allows the estimation of the expected order of variations

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Magnetic Dipole Above a Double-Layer Medium. On the Geologic Mapping by Means of Aeroelectric Prospecting

of the secondary magnetic field. The expounded theoretical considerations made it possible to draw the conclusion that the aeroelectric prospecting using magnetic dipole can provide a valuable material for charting the resistance of the original rocks. The accuracy of determining the contacts of different rocks increases with an increased ratio of their conductivity. It is possible to distinguish confidently the rocks from each other, if their conductivities differ by a factor of 5 - 6 and the thickness of the overburden does not exceed 20 - 30 m. The presence of horizontal stratification in the upper mellow layer cannot hinder, under certain conditions, the application of the theory. In the authors' opinion, in the present stage of development of the aeroelectric prospecting, the proposed theory can be useful for experimenters, planners and prospectors.

A.A. Smirnov

Card 2/2

SOV/169-59-7-6728

Translation from: Referativnyy zhurnal, Geofizika, 1959, Nr 7, pp 30 - 31 (USSR)

AUTHOR: Sheynmann, S.M.

TITLE: On the Possibility of Utilizing Telluric Current Fields and Remote Radio Stations for Geological Mapping

PERIODICAL: Tr. Vses. n.-i. in-ta metodiki i tekhn. razvedki, 1958, Nr 1, pp 189 - 209

ABSTRACT: The author discusses the question of utilizing telluric current fields and remote radio stations for determining the relief and the nature of the original rocks under the alluvium. It is presumed that both the telluric field and the field of radio stations in a remote zone are identical, in relatively small areas, to the field of a quasiplane vertically polarized wave, and the fundamental properties of the field in a stratified medium are discussed. The author draws the conclusion that the utilization of remote radio stations is expedient for geological mapping, when the alluvium is not existent or when its resistivity

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SOV/169-59-7-6728

On the Possibility of Utilizing Telluric Current Fields and Remote Radio Stations for Geological Mapping

is large ($\geqslant 10^4$ ohm cm). When observing telluric currents, the problems of the structural and geological mapping of the original rocks which occur under conducting deposits lying horizontally with a thickness up to hundreds of meters, can be solved successfully. It is pointed out, that the study of the phase relations in the telluric field may turn out to be of interest for the geological interpretation of anomalies.

A.A. Smirnov

Card 2/2

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Comparative hydromatic tests of plates of various designs. Khim. mashinostr. no.3:15-17 My-Je '63. (MIRA 16:11)